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ABSTRACT

After providing descriptions of educational research and development (R & D) and the background and role of the educational researcher, this document analyzes different minority groups' representation in the field in relation to their proportion of the total population. Specific topics dealt with include: (1) the distribution of minority personnel within the field of educational R & D; (2) the distribution of minorities in training for employment in the field; (3) major forces affecting minorities in entering careers in educational R & D; and (4) the need for increased minority participation. Supportive data are presented in the form of charts and text. General findings presented indicate that blacks and hispanics (including Puerto Ricans) are substantially under represented, whites and Orientals are over represented, and the representation of American Indians in Educational R & D is approximately equal to their proportion in the total United States population. (Author/EB)

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WHAT IS EDUCATIONAL RESEARCH AND DEVELOPMENT AND WHY THE CRITICAL NEED FOR INCREASED MINORITY PARTICIPATION?

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ABSTRACT

Minority groups considered within this paper comprise about 17 percent of the total U. S. population. Yet this same group is about seven percent of the personnel in Educational Research and Development. Racial and ethnic sub-groups differ greatly in their representation in the total population of the nation. Among groups that are over represented in Educational R&D are Whites and Orientals. American Indians appear to be approximately equal to their proportion in the total U. S. population. Only Blacks and Hispanics, including Puerto Ricans, appear to be substantially under represented.

Delivered by Dr. Ronald Braithwaite at American Educational Research Association Annual Meeting, (Hilton Hotel), New York City, April 4, 1977, Sponsored by the National Institute of Education and A.E.R.A. Special Interest Group - Research Focus on Black Education.

WHAT IS EDUCATIONAL R&D?

Educational research and development (R&D), more recently called Educational Knowledge, Production and Utilization (KPU), has become an integral part of the educational scene with many of its salient characteristics shaped during the last decade. While many educators and practitioners recognize the relative infancy of Educational R&D as a discipline, there has been a growing public focus on what should be or should not be happening in our schools. In general, the effects of Educational R&D upon educational practice have been disappointing because the level of effort has been too small, the well-trained researchers too few, and resources too restricted.

Educational R&D is yet to enjoy a totally acceptable definition. Many of the differences in definition are equivalent to the "growing pains" of an infant. But most researchers can agree that it is a disciplined inquiry designed to study and improve educational delivery systems and the attending impact on learners. Identification of patterns and styles of learning and teaching both diverse populations and sub-populations is near the heart of Educational R&D. Professionals working in the field are generally concerned with multiple characteristics affecting student achievement and related socio-psychological behaviors.

Knowledge in general has been depicted as a cumulative process, requiring differential levels of organized input to students. From these flow multiple strategies and teaching methods. However, knowledge for the sake of knowledge is, at best, certainly questionable and debatable. The youth of our society are rebelling

against this notion as evidenced by their clamour for relevance in course content. As a consequence, they have discerned at a relatively early age the importance of linking learning and knowledge to marketable skills; that is, the measurement of education is "employability."

Educational R&D purports a scientific and objective approach to the greater understanding of educational phenomenon. Professionals in the field engage Educational R&D through use of various methodological approaches. More specifically, they use historical, descriptive and experimental designs, case studies, participant observation, documentary analysis, anecdotal records, unobtrusive measures, and surveys. They design and implement needs assessments, feasibility studies, formative-summative program evaluations, cost benefit analysis, and policy studies. Educational researchers are instrumental in training instructional personnel, advising on policy options, and generally seeing that schools and colleges proceed with adequate knowledge of their past sins and current problems.

Researchers use the tools, concepts and theories of inquiry provided by numerous disciplines to examine various aspects of education. Ideally, such research should embrace rigorous interdisciplinary approaches. Unfortunately, such collaboration is not always forthcoming.

Many who identify themselves as educational researchers have had formal training in several disciplines. However, there are too few of them with the necessary specific background and training to impact public opinion in a very systematic and authoritative manner.

Educational research operates in a troublesome environment which is controlled by the few whose findings are usually viewed with suspicion, particularly when their findings are controversial, methodologically weak and unpopular. Unlike scientific research in climatology or oceanography, the Educational R&D environment is further distorted by the low level of effective, on-going communication between researchers and practitioners.

STATUS OF MINORITY PARTICIPATION IN EDUCATIONAL R&D

The N.I.E. report, "Participation of Women and Minority Sub-Groups in Research Related Activities in the Field of Education," by John C. Egermeier, is very revealing. The bill of particulars is very disturbing in its prognosis. To encompass the totality of minority participation in R&D, it is necessary to include public questions relative to the status of minority participation in Educational R&D, an empirical statement can be formulated.

Question #1 - How does the distribution of minorities in Educational R&D compare with their distribution in the population as a whole?

In the 1970 U.S. Census, the four major groupings of minorities (Black, Spanish American, American Indian, and Oriental) account for approximately 17% of the total population. The same groups account for 7% of the Educational R&D workforce as measured by membership in American Educational Research Association (A.E.R.A.) (See Table I)

Table I

Minority Group	Percentage in U.S. Population (1970 Census)	Percentage of 1976 Membership in AERA
Black	10.9%	2.8%
Spanish American	5.1%	1.1%
American Indian	.4%	.5%
Oriental	.9%	2.6%
Total	17.3%	7.0%

The percentage of Orientals in Educational R&D is about three times their representation in the total U. S. population. Within the primary educational research professional organization (A.E.R.A.), under-representation of minorities and particularly Blacks and Spanish Americans is evident.*

Question #2 - What is the distribution of minority personnel within the field of Educational R&D? How many persons currently are employed, at what levels, in what kinds of organizations, and in what type of Educational R&D work?

Membership data from A.E.R.A. indicates that the proportions of minority group members across employment groupings leaves much room for improvement. Table II indicates that with the exception of N.I.E.-supported laboratories, minorities as a whole, are represented in Educational R&D organizations in approximately one-third to one-half their proportion of the total U.S. population.

*1976 A.E.R.A. membership survey had a 75% response rate.

TABLE II

PROPORTIONS OF MINORITIES
IN SELECTED EDUCATIONAL R&D EMPLOYMENT GROUPINGS

Employment Grouping	n	Sub-Group as % of Total Group
All managers and professionals in N.I.E. Laboratories (N=616)	116	18.8%
All managers and professionals in N.I.E. R&D Centers (N=407)	39	8.8%
AERA members at colleges and universities with primary responsibility in R&D (N=1784)	130	7.3%
AERA members in R&D organizations with primary responsibility in R&D (N=661)	41	6.2%
AERA members in school systems with primary responsibility in R&D (N=553)	40	7.3%
AERA student members (N=818)	73	8.9%
Total	439	

The low representation of minorities within these employment sub-groups suggests that affirmative action is more a myth than a reality. Additional status data relative to type of institutional affiliation, primary responsibility and highest earned degree indicates the relatively low number of minority group participants.

In four out of the six types of institutional affiliation, minority females are less than half the percentage of minority males, and across all affiliates, no single type exceeded 10.5 per cent. The latter is the combined per cent (minority males

and females) representing colleges and universities. For both male and female minorities were least affiliated with industry. As for primary responsibility, a similar relationship exists; that is, minorities are disproportionately under-represented. (See Table III)

Table III

Distribution of Caucasian and Minority AERA Members by Institutional Affiliation, Primary Responsibility, and Highest Degree -- 1976

INSTITUTIONAL AFFILIATION	(n)	All Minorities* F %	All Minorities* M %	Caucasian F %	Caucasian M %	Total F %	Total M %
Col./Univ.	6547	3.5	7.0	26.6	63.1	29.9	70.1
School	1084	4.3	5.6	26.7	63.5	30.9	69.1
SEA	339	1.5	6.2	21.8	70.5	23.3	76.7
Federal	300	2.7	6.3	26.3	64.7	29.0	71.0
Industry	144	2.1	3.5	22.2	72.2	24.3	75.7
R&D Organization	661	3.0	5.8	26.8	64.4	29.8	70.2
Other	578	3.3	4.7	36.3	55.7	39.6	60.4
Total	9653	3.3	6.5	27.0	63.3	30.2	69.8
PRIMARY RESPONSIBILITY							
Student	903	4.0	8.0	43.1	45.0	47.1	52.9
Research	1575	2.9	7.1	24.5	65.5	27.4	72.6
Evaluation	810	3.6	5.8	30.2	60.4	33.8	66.2
Development	497	3.8	4.8	30.4	61.0	34.2	65.8
R&D Management	710	1.7	7.3	14.5	76.5	16.2	83.8
Other	4605	3.3	6.2	25.1	65.4	28.4	71.6
Total	9100	3.2	6.5	26.7	63.6	29.9	70.1
HIGHEST DEGREE							
Doctorate	6942	2.7	6.3	22.6	68.4	25.4	74.6
Masters	2239	4.6	7.5	38.3	49.6	42.9	57.1
Total	9181	3.2	6.6	26.4	63.8	29.6	70.4

*Includes all non-caucasian respondents
SOURCE: 1976 AERA Membership Survey

Question #3 - What is the distribution of minorities in training for employment in Educational R&D? How many are in training in relevant fields? How many are doctorates obtaining graduate research experience, and Educational R&D employment after graduation?

An examination of the training path leading to employment in Educational R&D reveals that, while minorities make up 17.3% of the total U. S. population aged 18-24, they are only 13% of the college-bound high school seniors, only 7.2% of the total enrollment at the graduate level in doctorate granting insittutions, and 6.4% of all doctorate recipients. On the whole, then, minorities are represented in the Educational R&D workforce in about the same proportion as in graduate schools granting doctorates. Prior to reaching that level, heavy attrition depletes their ranks disproportionally in relation to non-minority students.

This abnormally high attrition of minority students is shown in Table IV for each of the minority groups. Note the descending patterns of percentages for total minorities as one moves up the educational stages. These data suggest a "funnel effect." Also, it indicates that the Spanish American sub-population experience the greatest pre-college attrition. Blacks also have disproportionally high attrition on the way through undergraduate levels to doctorate. That the effect of pre-college attrition is reducing the potential pool of minorities with research qualifications is illustrated dramatically by the U.S. Bureau of Census data for 1969-1970: The proportion of all 20-21 year-old white males entering college (47%) was double that of Blacks. While pre-college attrition may seem remote to the immediate problem of increasing

participation of minorities in the education KPU work force, it should be clear that the relative scarcity of appropriately trained personnel is largely a result of attrition prior to entering college.

The fields of education, psychology and sociology have yielded a preponderance of professionals who currently work in Educational R&D jobs. Graduate enrollment data for these three disciplines for the 1973-74 school year indicate that there were 7,868 Blacks, 1,323 Spanish Americans, 424 American Indians and 735 Orientals. This is a total of 10,170 minority students in contrast to 111,442 total graduate students within the three disciplines. Making the assumption that all 10,170 minority students in the field of education, psychology and sociology specialized in research design, conduct, analysis and interpretation, is untenable. If this were the case, a substantial pool of minorities in training for careers in Educational R&D would exist.

Information reported by the National Academy of Sciences, in their 1975 Survey of Earned Doctorates reveals that 11.6%, 32.3% and 26% of the Blacks who received doctorates that year also held a research assistantship in education, psychology or social sciences respectively. With the exception of the Oriental group, the percentages are quite low when contrasted with their white peers. (See Table V)

Information retrieved from the same N.A.S. survey (1975) suggests that, with the exception of Orientals in education and social sciences, minorities are not eagerly accepting positions

Table IV

Minority Groups as Percentages of Total Enrollment at Various Educational Stages

Educational Stage	Black	Spanish American	American Indian	Oriental	Minority Total	Non-Minority Total
(% of 18-24 year olds in U.S. Population 1970 census)	10.9%	5.1%	.4%	.9%	17.3%	82.7%
% of college bound high school Srs. (CEEB Testing Program 1975)	8.2%	2.2%	.3%	2.2%	12.9%	87.1%
% of 1973 graduate enrollment in doctorate granting institutions	4.4%	1.1%	.3%	1.4%	7.2%	92.8%
% of doctorate recipients 1975	3.7%	1.1%	.5%	1.1%	6.4%	93.6%

SOURCE: College Bound Seniors 1975, CEEB Admissions Testing Program, Princeton, New Jersey.

Enrollment of Minority Graduate Students, ACE, August 1974; 1975 Earned Doctorate Survey, National Academy of Sciences

Table V

Total numbers of 1975 doctorates, and numbers who obtained research assistantship experience, excluding holders of temporary visas.

	ALL DOCTORATES IN EDUCATION			ALL DOCTORATES IN PSYCHOLOGY			ALL DOCTORATES IN SOCIAL SCIENCES		
	Total number (n)	Held research assistantship (n)	(%)	Total number (n)	Held research assistantship (n)	(%)	Total number (n)	Held research assistantship (n)	(%)
Total	5,802	997	17.1	2,160	931	43.1	2,841	1,096	38.6
Men	4,067	713	17.5	1,518	678	44.7	2,294	902	39.3
Women	1,735	284	16.3	642	253	39.4	547	194	35.5
White	4,930	863	16.4	1,971	860	43.6	2,408	941	39.0
Black	492	57	11.6	65	21	32.3	115	30	26.0
American Indian	38	8	21.0	10	1	10.0	8	-	-
Chicano	73	8	10.0	24	11	45.8	23	11	47.8
Puerto Rican	14	1	7.2	8	1	12.5	5	1	20.0
Oriental	110	31	28.2	22	11	50.0	125	57	45.6
Other & Unknown	145	29	20.0	60	26	43.3	157	56	35.7

SOURCE: 1975 Survey Earned Doctorates, National Academy of Sciences.

in research upon graduation. Respective educational research entry frequencies in 1975 for Blacks, were 94, 32, and 50; for American Indians, 8, 4, and 4; for Chicano, 8, 9, and 12; Puerto Rican 3, 3, and 3; and for Orientals, 48, 9, and 69 for the fields of education, psychology and social sciences.

Question #4 - What major factor differentially affect minorities in entering careers in Educational R&D?

While racism and economic barriers affecting equitable access to minority training for careers in Educational R&D are in part explanatory of the phenomenon, these variables cannot be adequately discussed within the limitations of this paper. However, very much related to the "funnel effect" is an observation which suggests that there are insufficient quantitative skills among disproportionately large clusters of minority students, particularly Blacks. Indications are that where careers in Educational R&D require a quantitative orientation at least in part, disproportionately high numbers of minority students are counseled or elect to take the "path of least resistance" when it comes to quantitative courses taken while in high school. This trend must be reversed or at least minimized. According to a CEEB study, the percentage of college-bound minorities is low when compared to their white peers in age group 18-24.

Many indictments and caveats have been hurled toward the european gatekeepers of our society. Yet, the "American Dream" of equality is at best a misnomer. The "business as usual" stance which is reflected by R&D-oriented universities regarding

minority enrollment, has undoubtedly functioned to decay KPU. The few minorities who have received attention for being expert educational problem-solvers are only a very small sample from their respective ethnic populations.

WHY THEN THE NEED FOR INCREASED MINORITY PARTICIPATION?

A multi-cultural society cannot survive without maximum pluralistic input across reference groups. The insensitivity of many R&D personnel to minority concerns is due for a caustic showdown. The data falsification by the late Cyril Burt concerning heritability of intelligence -- an act which parallels the Tuskegee syphilis study in its insensitivity -- are examples of the volatile environment created by the interest of some researchers.

It is not the intent of this document to react to all of the ill conceived studies so tainted with faulty assumptions and plagued with imprecise descriptions of problem definition. Williams (1974) has vividly illustrated the links between racist social scientists in his description of the Tree of Scientific Racism in his book, Black Psychology. At the root of the tree we find Darwin in 1859. Ascending the trunk we find the work of Galton in 1869, Bean in 1906, Hall in 1909, Mck. Cattell in 1917, Garrett in 1955 and Shuey in 1958. Modern expansion of this theory is indicated by the 1960 work of Schockley, Jensen and Jencks. The contributions of Moynihan, Coleman, Pettigrew, Armor, Hess, Shipman, Herrnstein, Burt et.al., have also promoted and abetted a stereotype caricature of minority populations.

As Ryan (1971) has so cogently remonstrated, educators, evaluators and researchers are still caught in the rut of "blaming the victim" as opposed to objective system analysis and self-study. He asserts that cultural deprivation has become an omnibus explanation for the educational disaster area known as the inner-city schools. The generic process of "blaming the victim" is applied to almost every American problem.

The reflections of some minority Educational R&D practitioners are revealing. Williams (1975) asserts that the R&D process as applied in education should parallel R&D in industry. Williams says, "Although an R&D approach to problem solving is generally espoused in education, usual practice has been to identify the problem, identify a cause, and then propose a solution -- usually without benefit of sufficient data or rigorous pilot testing." The lack of informed judgement by numerous educational decision-makers certainly leaves much to be desired.

Gordon (1975), assigns a low rating to those doing R&D with minority populations. He advances the charge that the rating is sub-standard because the most pressing problems have not received the necessary attention. One such problem involves identifying and understanding the mechanisms of learning facility, learning dysfunction, and the implications of both for the optimum development of heterogeneous populations. This problem broadly conceived has received an enormous amount of attention, but progress in identifying and understanding these mechanisms has been equally as slow. Furthermore, he says that the lack of certainly about the mechanisms of learning facility and dysfunction is very imprecise and demand immediate attention from

the R&D community.

Scott (1975), directs attention to making research results applicable and useful to target populations. She alludes to a researcher-methodology interaction bias which negatively effects minority population samples. Williams (1975) and Gordon (1975) have also acknowledged the conceptual distortion frequently associated with the majority group value system and life experiences of the researcher.

The practice of uncritical acceptance and application of research findings is seen as having a debilitating effect on minority populations. Measurement problems in the behavioral sciences is more imprecise than those of the physical sciences; conceptualization of problem statements and the resultant interpretation of findings is cause for great concern. The inference is that much of the confounding is set into motion by conceptual limitations which leads to methodological limitations and resultant uncertain and weak external validity. Before educational research findings enjoy wholesale acceptance, they must undergo validation, re-validation and replication. To bypass any of these steps is to risk being discredited.

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BIOGRAPHICAL SKETCH

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He received his doctorate (1974) in education from Michigan State University. He has also done post-doctoral work at Howard University - under a grant from the National Institute of Education.